iSeries Integrated xSeries Solutions

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iSeries Product Marketing

iSeries Windows 2000 Server® Integration

- ## Solutions

  - ► **Extend OS/400 applications with Windows™**

  - ► **Consolidate Windows Servers**

- ## Approach

  - ► **Leverage xSeries hardware**

  - ► **Use Standard Windows Server software**

  - ► **Add value to Windows servers**

- ## Choice of Offerings

  - ► **Server "under the covers" - Integrated xSeries Server**

  - ► **Direct Attach xSeries Server - Integrated xSeries Adapter**

Integrated xSeries Server

- **Intel® 1.6 GHz Xeon™ Processor**

- **Integrated 10/100 Mbps Ethernet Adapter**

- **Virtual disk resources**

- **Shares iSeries Tape, DVD, CD-ROM**

- **iSeries Models 270, 8xx**

- **Windows Server 2003® and**

  Windows 2000 Server® support

www.ibm.com/eserver/iseries/windowsintegration

Integrated xSeries Adapter

- **Attaches the latest 2, 4, 8-way xSeries Servers***
  - ► **x235, x255, x360, x440**
- **Virtual disk resources**
- **Shares iSeries Tape, DVD & CD-ROM**
- **iSeries Models 270, 8xx**
- **Windows Server 2003® and**

  Windows 2000 Server® support

Enterprise **X**-Architecture™

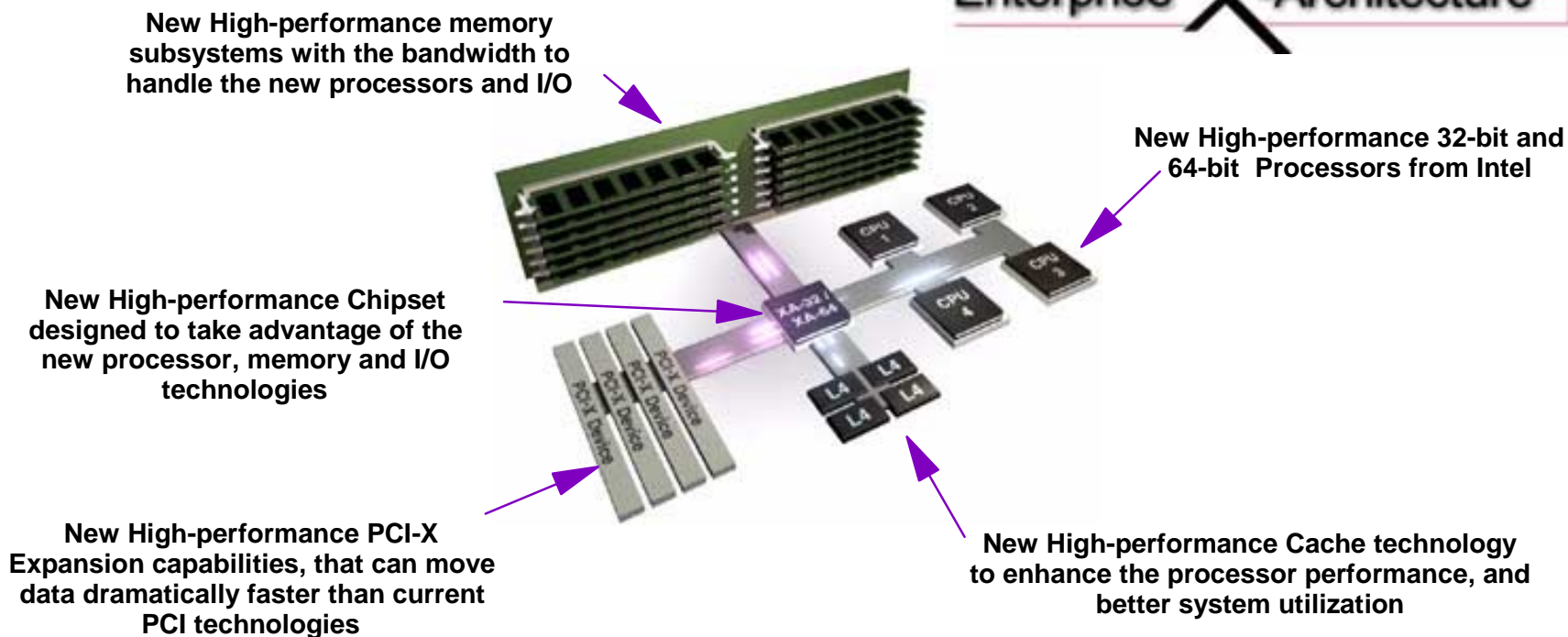*www.ibm.com/eserver/iseries/windowsintegration*
www.ibm.com/eserver/xseries

* Selected Open Bay models of x235, x255, x360, and x440

Matched, High-performance Technologies

> **Matching new high-performance 32 and 64-bit processor technology, with new high-performance memory and I/O subsystems.**

Enterprise X-Architecture™

New High-performance memory subsystems with the bandwidth to handle the new processors and I/O

New High-performance 32-bit and 64-bit Processors from Intel

New High-performance Chipset designed to take advantage of the new processor, memory and I/O technologies

New High-performance PCI-X Expansion capabilities, that can move data dramatically faster than current PCI technologies

New High-performance Cache technology to enhance the processor performance, and better system utilization

Result: Increased overall performance, system utilization, scalability and availability

Increased support for Integrated xSeries Solutions

Integrated xSeries Server (IXS)

Model	Max IXS	Model	Max IXS
		800	4
270	3	810	13
820	12	825	36
830	28	870	48
840	32	890	48

Integrated xSeries Adapter (IXA)

Model	Max IXA	Model	Max IXA
		800	3
270	2	810	7
820	8	825	18
830	16	870	60
840	32	890	60

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iSeries Integrated xSeries Solutions - on demand

- **Open Standards**
  - ► iSeries support of published <u>and "de facto"</u> industry standards
- **Virtualization**
  - ► Dynamic Virtual Storage
  - ► Virtual Ethernet
- **Integration**
  - ► Windows and OS/400 Applications
  - ► Server Management
  - ► Backup
- **Autonomic Computing**
  - ► Enterprise X Architecture
  - ► iSeries Single Level Storage
  - ► IBM Director
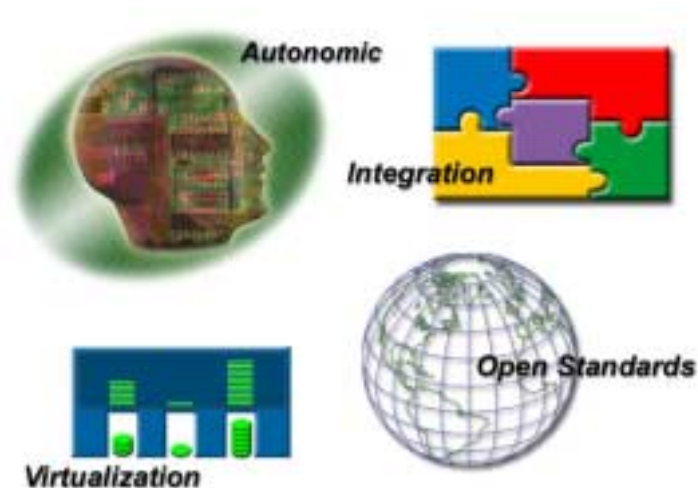
Server Management

Problem

‣ Multiple interfaces and resources to monitor server infrastructure

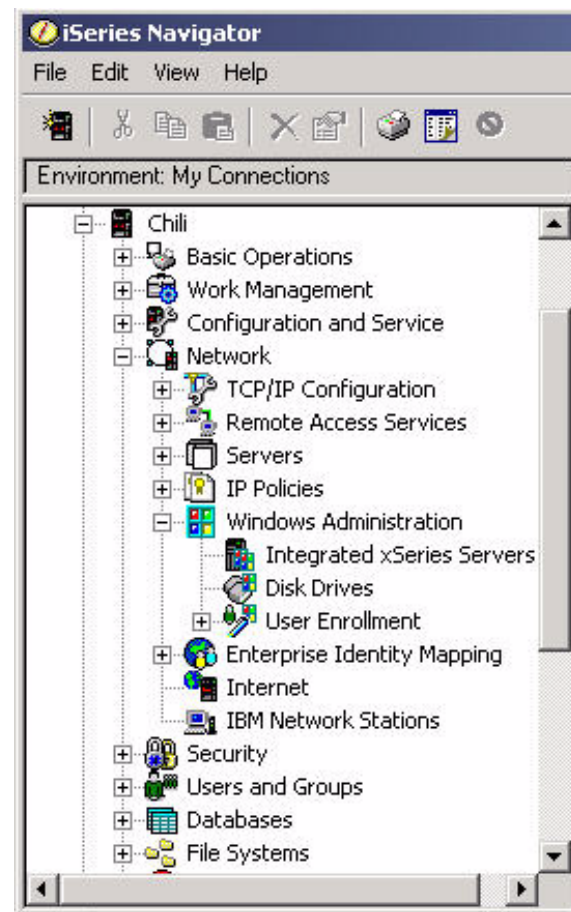**iSeries Solution**

‣ Leverage iSeries operations and resources to monitor and manage integrated xSeries servers

‣ iSeries Navigator is enabled for Wireless, PDA & Web Browser

Benefit

‣ Can reduce server operations through integrated server management

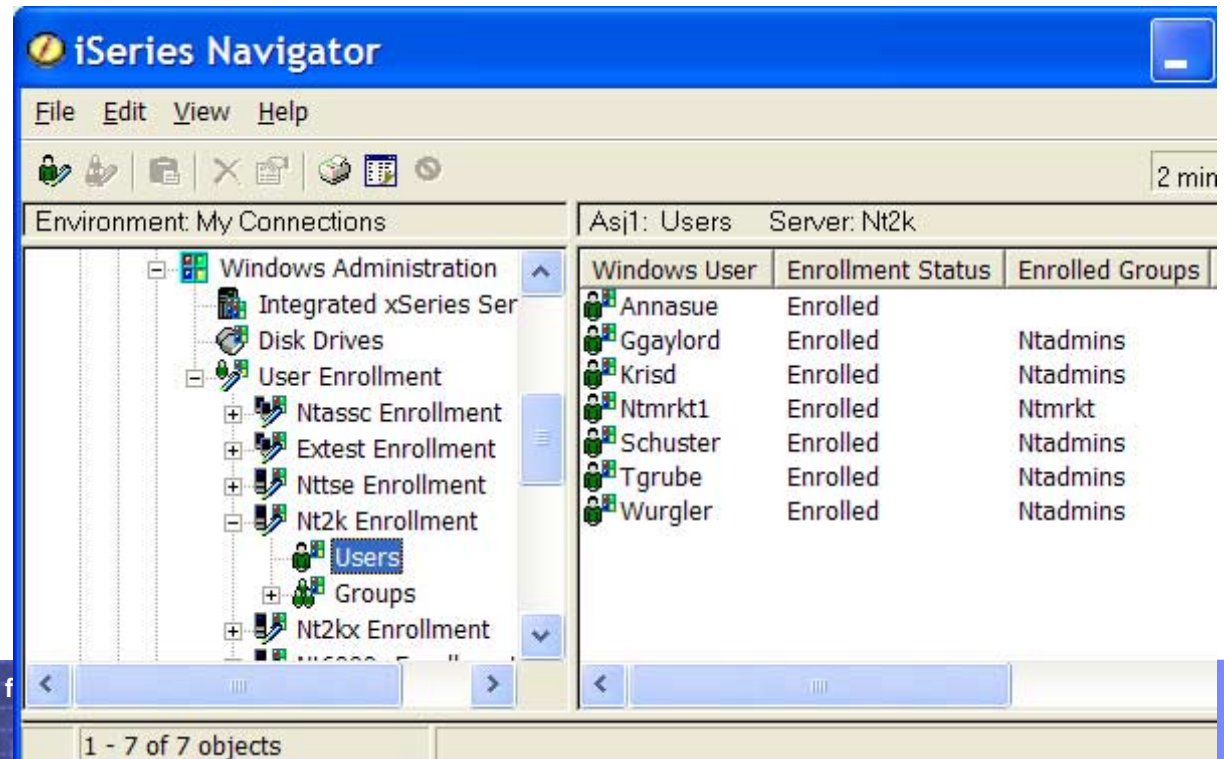www.ibm.com/eserver/iseries/navigator

User Administration

Problem

► Multiple system user management

iSeries Solution

► Adding OS/400 Users and Groups to Windows 2000 Server Domains and Synchronizing Passwords

Benefit

► Can reduce costs with integrated user management

E.D. Smith & Sons, Ltd.

- **Background**: E.D. Smith & Sons is a leading manufacturer of quality jams and food products located in Winona, Ontario

- **Objective:** Address scalability and responsiveness demands by giving employees Web-based access to critical business applications while controlling system complexity, administrative requirements and cost

- **Solution:** An IBM eServer iSeries 820 leveraging LPAR to deliver ERP, Lotus Domino & Business Intelligence applications and an xSeries 440 attached to an iSeries via the Integrated xSeries Adapter.

- **Why IBM?:** "The best investment was to bring user administration back where it belonged—under the guidance of the iSeries. I wanted everything centralized, which would make it much less resource-intensive to manage, and I wanted the iSeries to be in control of all the security and to handle all the backups."

-- Beverly Russell, IT Director, E.D. Smith & Sons, Ltd.
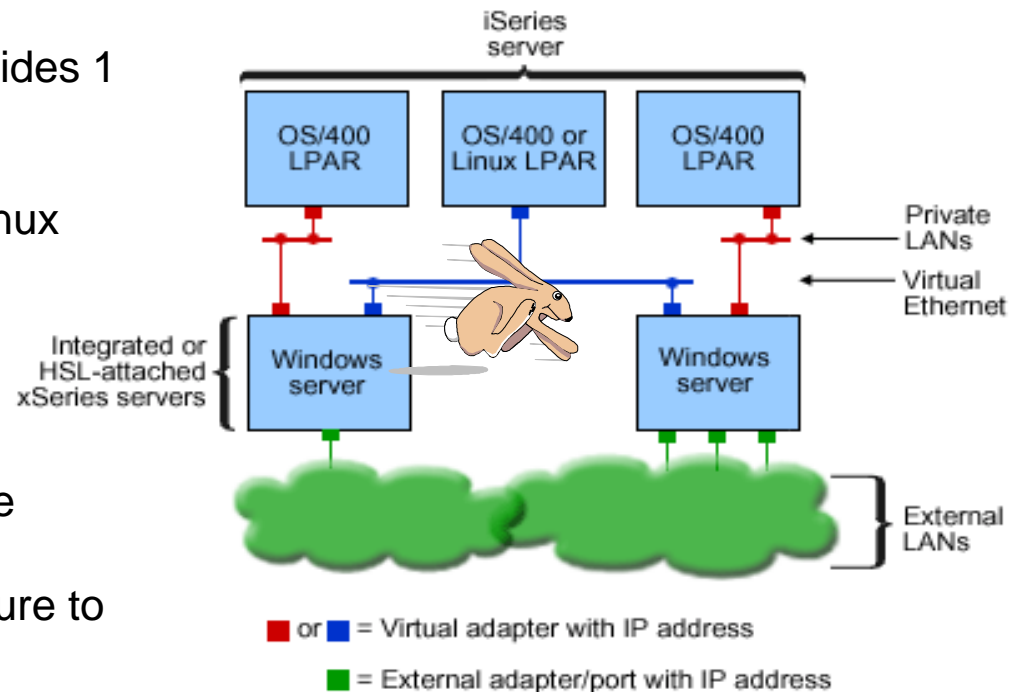
Virtual Networking

Problem

- ► Upgrading network infrastructure to support high-speed application communication is expensive in terms of time, resources and equipment

iSeries Solution

- ► Virtual Ethernet at OS/400 V5R2 provides 1 Gb Connections with no LAN Adapters/Switches
- ► Windows to Windows to OS/400 to Linux
- ► Up to 5 Connections per IXS / IXA

Benefit

- ► Extremely secure and reliable server communication over high-performance connections
- ► Can reduce network traffic and exposure to "sniffing"

iSeries server

| OS/400 LPAR | OS/400 or Linux LPAR | OS/400 LPAR |

Private LANs

Virtual Ethernet

Integrated or HSL-attached xSeries servers

Windows server | Windows server

External LANs

■ or ■ = Virtual adapter with IP address

■ = External adapter/port with IP address
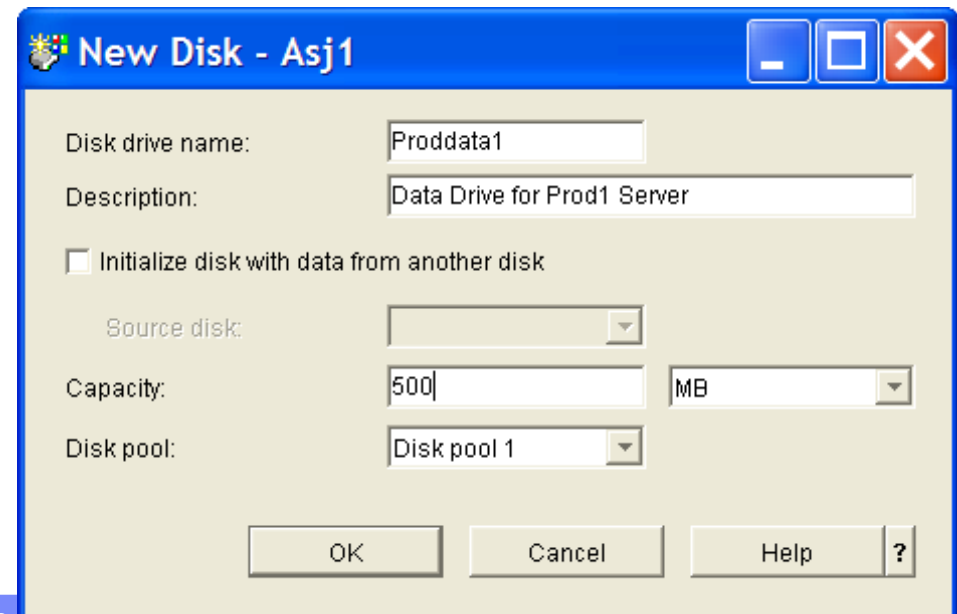
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Virtual Storage

Problem

▸ Storage management across the server farm

iSeries Solution

▸ Flexible Virtual Disks from 1 MB to 64 GB.

▸ Up to 2 TB per Windows server

▸ Hot add of iSeries Storage Space to Windows 2000 Server

Benefit

▸ Can reduce costs with flexible, centralized storage management

New Disk - Asj1

Disk drive name:	Proddata1
Description:	Data Drive for Prod1 Server

☐ Initialize disk with data from another disk

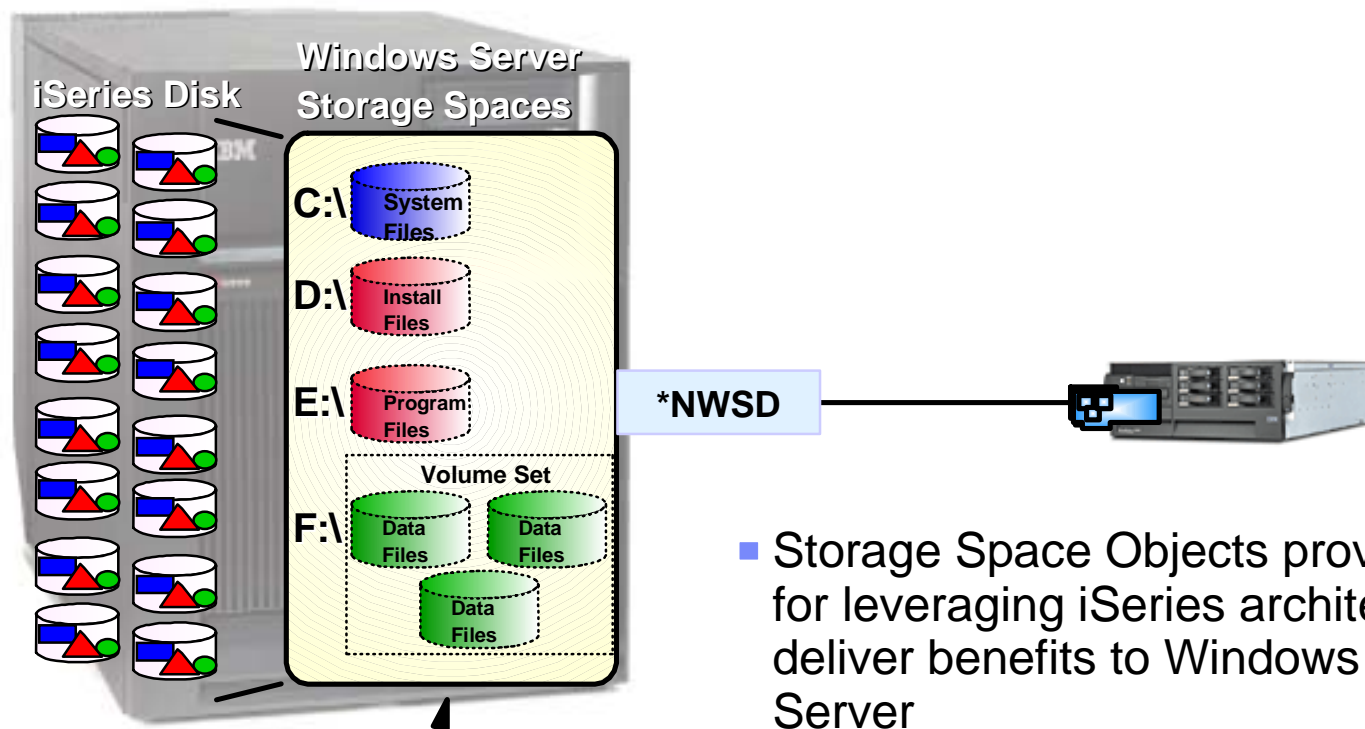|	
Source disk:	
Capacity:	500 MB
Disk pool:	Disk pool 1

OK   Cancel   Help   ?

iSeries Storage Virtualization for Windows 2000 Server

iSeries Disk

Windows Server Storage Spaces

C:\ System Files

D:\ Install Files

E:\ Program Files

Volume Set

F:\ Data Files | Data Files | Data Files

*NWSD

Add disk storage to a Windows 2000 Server dynamically

- Storage Space Objects provide basis for leveraging iSeries architecture to deliver benefits to Windows 2000 Server
  - ► Performance
  - ► Consolidated Backup
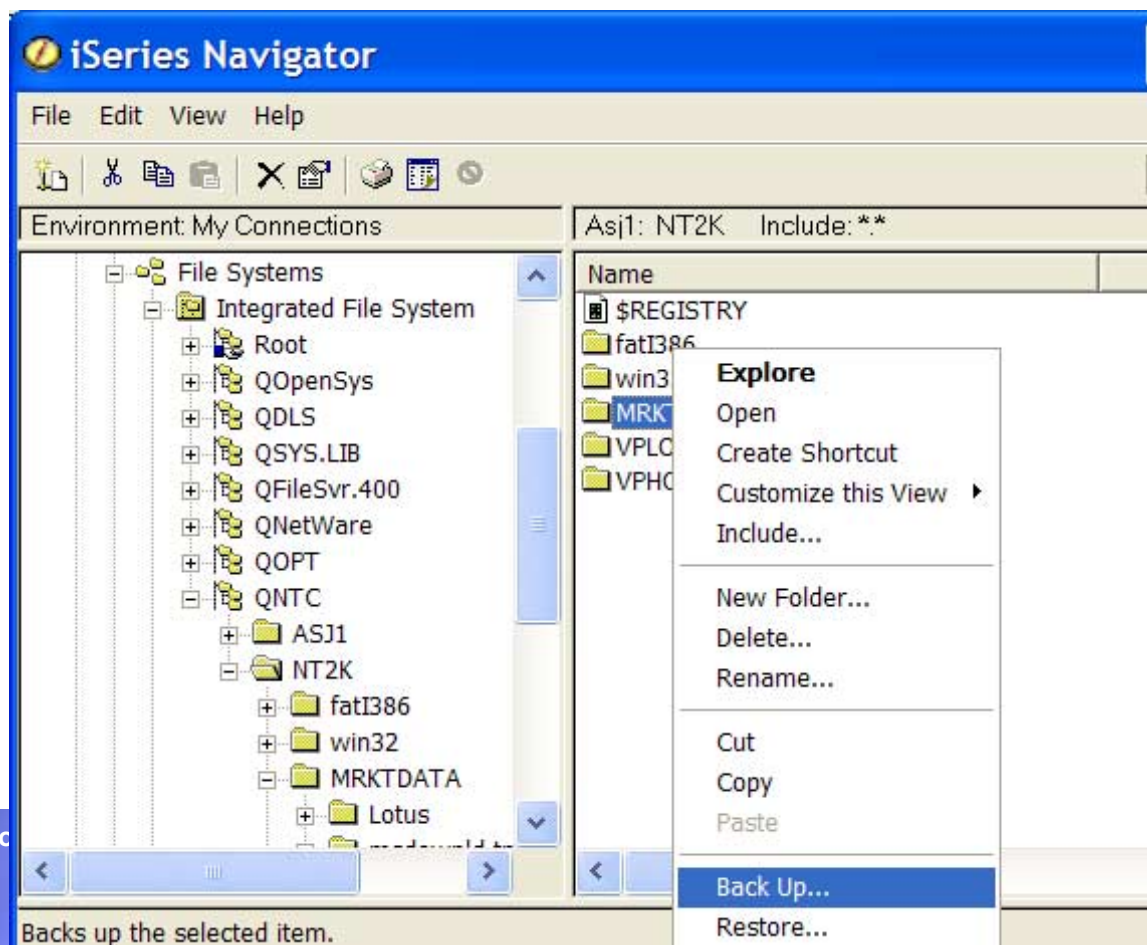 - ► Hot Spare
  - ► Testing

Integrated Backup

Problem

▶ Managing and automating heterogeneous backups

iSeries Solution

▶ Save OS/400 and Windows storage spaces to iSeries tape drives

Benefit

▶ Can reduce costs by leveraging iSeries resources and skills

Testing

Problem

- ▶ Adequately testing Microsoft Service Packs, Application Fixes, device drivers before they are placed in production

iSeries Solution

- ▶ Logical Servers allows testing with an exact copy of the production image and hardware
- ▶ One test server can support multiple similar production environments

Benefit

- ▶ Can reduce the outages caused by change

Virtual Drives

Server A

C:
D:
E:

*NWSD

Server B
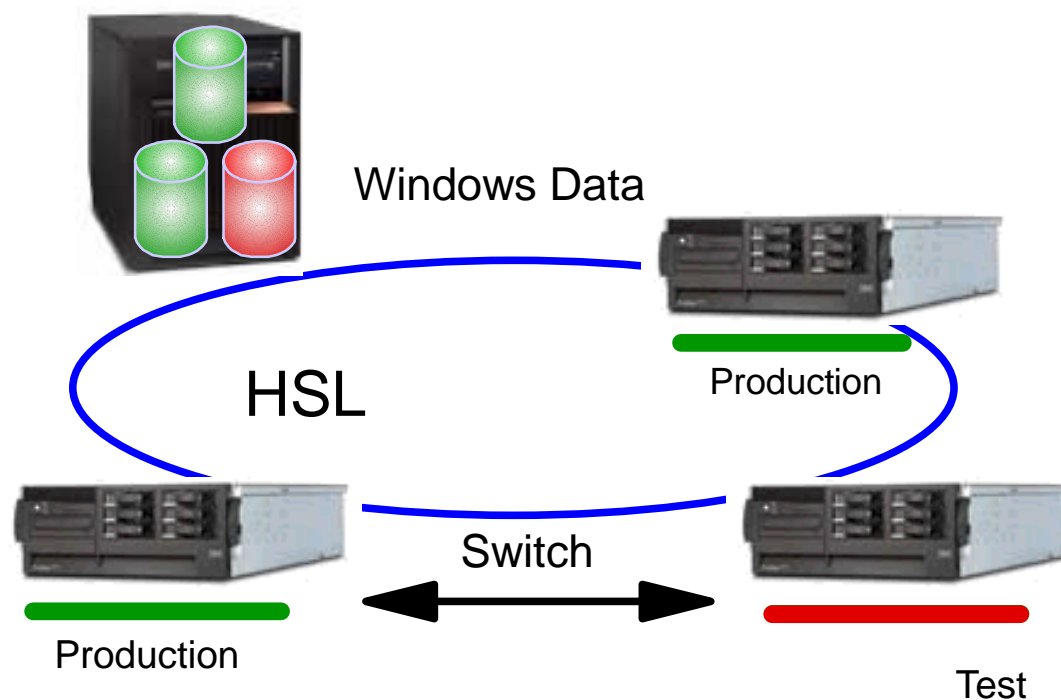
C:
D:
E:

*NWSD
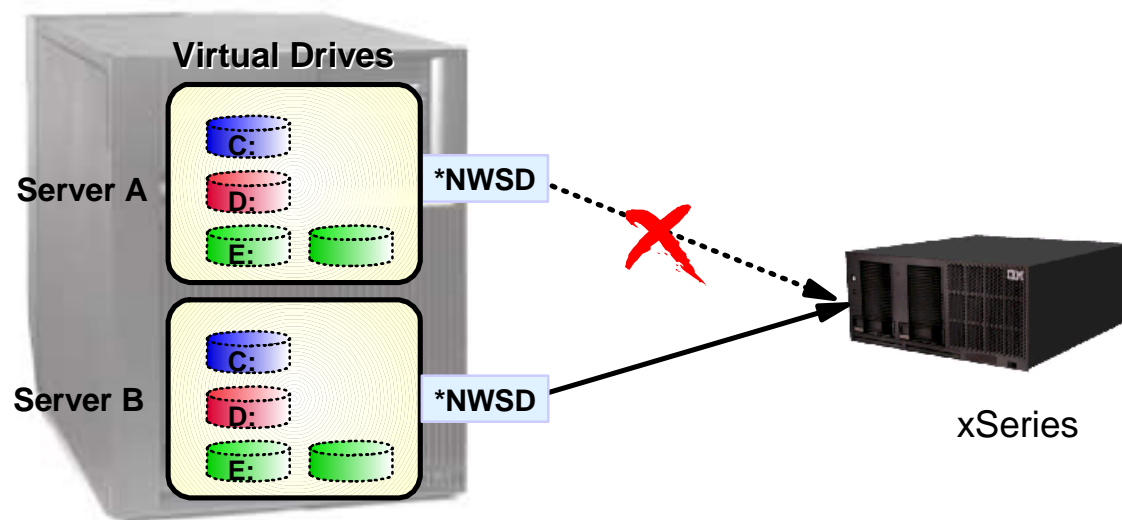
xSeries

Availability

Problem

▶ Providing an effective and efficient availability solution

iSeries Solution

▶ Hot Spare allows one xSeries server to provide a backup to several production servers

Windows Data

HSL

Production

Benefit

▶ Efficient availability solution for planned or unplanned server outages

Production

Switch

Test

Huhtamaki

Background: Huhtamaki, in DeSoto, Kansas, manufactures packaging such as molded cartons, paperboard trays and plastic containers for leading food service and consumer brands such as Chinet brand disposable paper plates.

Objective: Determine end of lease strategy, consolidate proliferation of Compaq servers, control system complexity, physical space consumption and cost

Solution: An integrated IBM eServer iSeries and xSeries infrastructure that enhanced reliability, is easy to manage, and reduced backup time by up to 75 percent

"Before consolidating on the iSeries and xSeries we required at least three dedicated administrators to run our servers…now because of its ease of use, we need only two administrators to run the new system."

-- Brendan Carlton,
      Systems Administrator

See Brendan at : www.ibm.com/servers/library/testimonial.html

iSeries Integrated xSeries Solutions for Windows 2000 Server

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Amelia Island Plantation

- **Background**: Amelia Island Plantation is Florida's premier AAA-Four Diamond destination island resort overlooking the blue water of the Atlantic

- **Objective:** Deploy new Windows server application requirements, replace aging Intel Server hardware, and introduce reliability to support 24X7 environment

- **Solution:** Consolidated 17 Intel servers to an iSeries Model 820 running JD Edwards, 6 Integrated xSeries Servers and 4 xSeries servers attached to iSeries via Integrated xSeries Adapters

- **Why IBM?:** "Under the new system, everything is simpler. Administration is much easier compared to standalone servers."
-- Andy Cook, Windows Systems Administrator

iSeries Integration Advantages

- **Server Management**
  - ► Integrated management of iSeries and xSeries
- **Virtual Ethernet**
  - ► Communicate more securely over 1 Gbps Virtual Ethernet connections
- **User Administration**
  - ► OS/400 Users, Groups, Passwords Synchronized with Windows
- **Dynamic Virtual Storage**
  - ► Up to 2 TB per Windows server
- **Integrated Backups**
  - ► Consolidate OS/400 and Windows backup operations
- **Testing**
  - ► Logical Servers allow testing with the production image and hardware
- **Hot Spare**
  - ► Easily switch production environment to another server
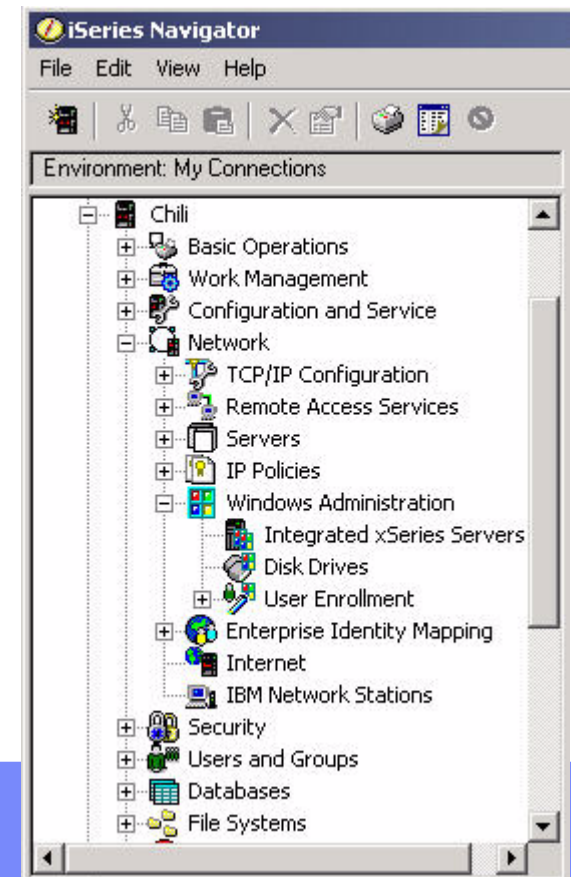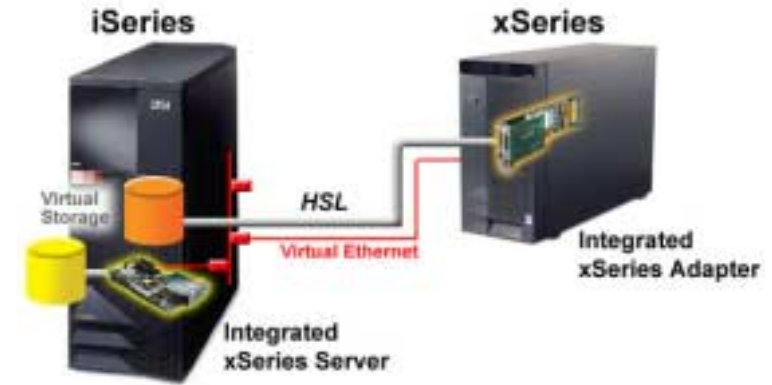
iSeries Windows Integration Summary
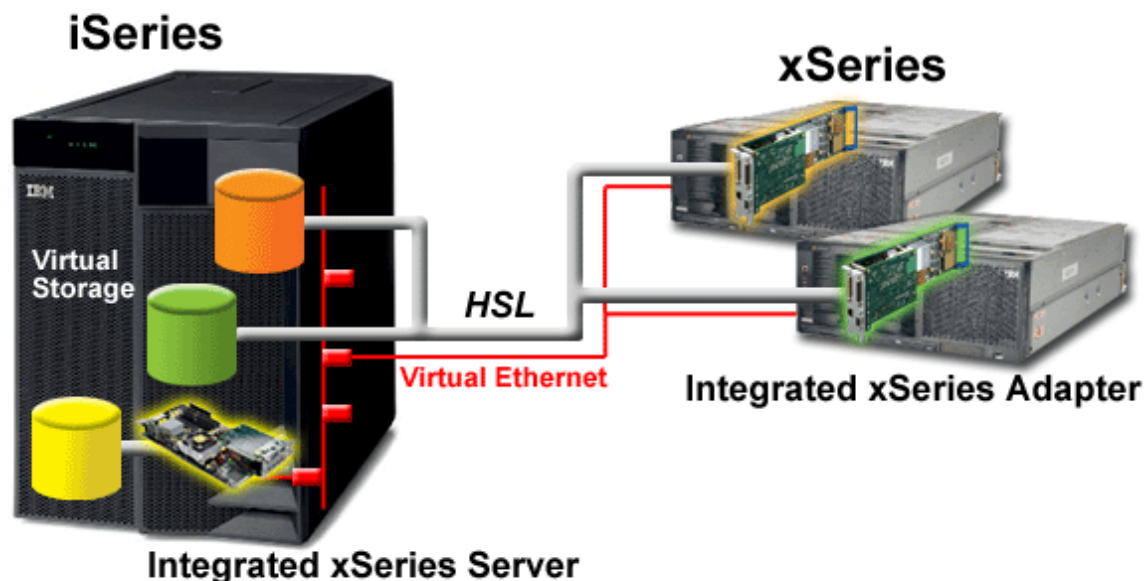
- **Integrate server management and user administration**
- **Leverage investment in iSeries resources and operations**
- **Simplify server test and deployment using Virtual Storage Spaces**
- **Communicate securely over 1 Gbps Virtual Ethernet connections**

IBM DB2 CommonStore for Lotus Domino
Lotus Domino E-mail and Document Archiving

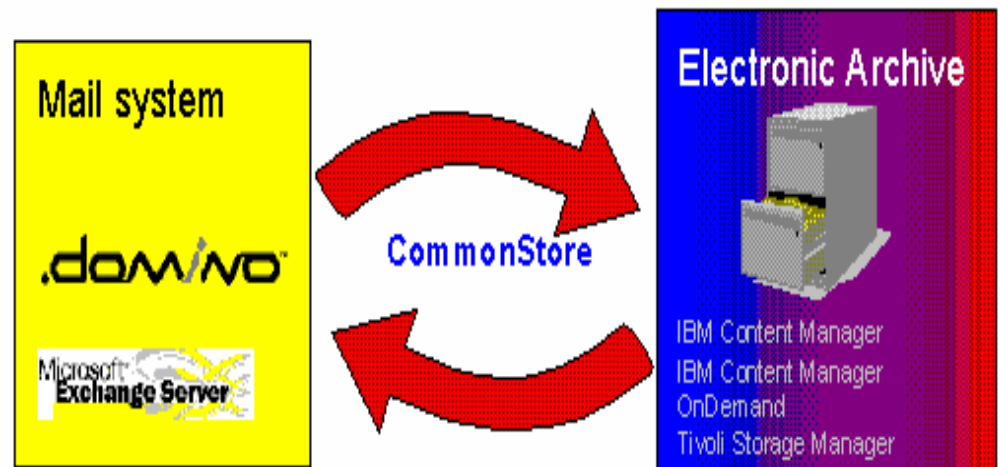**DB2** Information Management Software
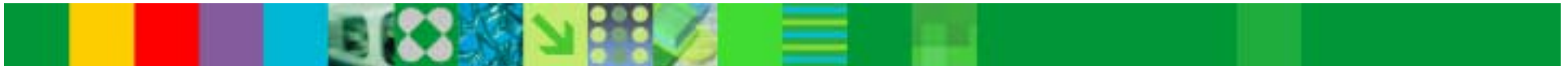
@business on demand software

Managing the Growth of Lotus Domino System

- Mailbox Growth..

  ▶ Mail box is used for managing business information (customer folder, project folder, ...) as well as communication..

  ▶ Mixture of important business data, informal communication, even private mails

  ▶ Retention policy is required.

    - Average mail box size: 120 MB
    - Annual growth: 45 MB
    - Average number of e-mails that are kept: 10 daily per user (going up)
    - Average mail size: 50 KB (growing)

- Growth of Lotus Domino Application Databases in number and size..

- Domino.Doc database growth

- There is no end to growth!

Relief for your Lotus Domino system with CommonStore

- **Efficient and automatic offload**
  - ▶ Moves data from <u>personal mail boxes, application databases</u> in expensive production environment to inexpensive storage environment (electronic archive)
    - ▶ Usually without meta data
    - ▶ Usually without format conversion

- **Storage in electronic archive system (repository)**
  - ▶ Significant compression
  - ▶ Storage on tape

- **Retrieval through the messaging client**
  - ▶ Easy
  - ▶ Fully integrated
  - ▶ No education needed

Mail system

.domino

Microsoft Exchange Server

CommonStore

Electronic Archive

IBM Content Manager
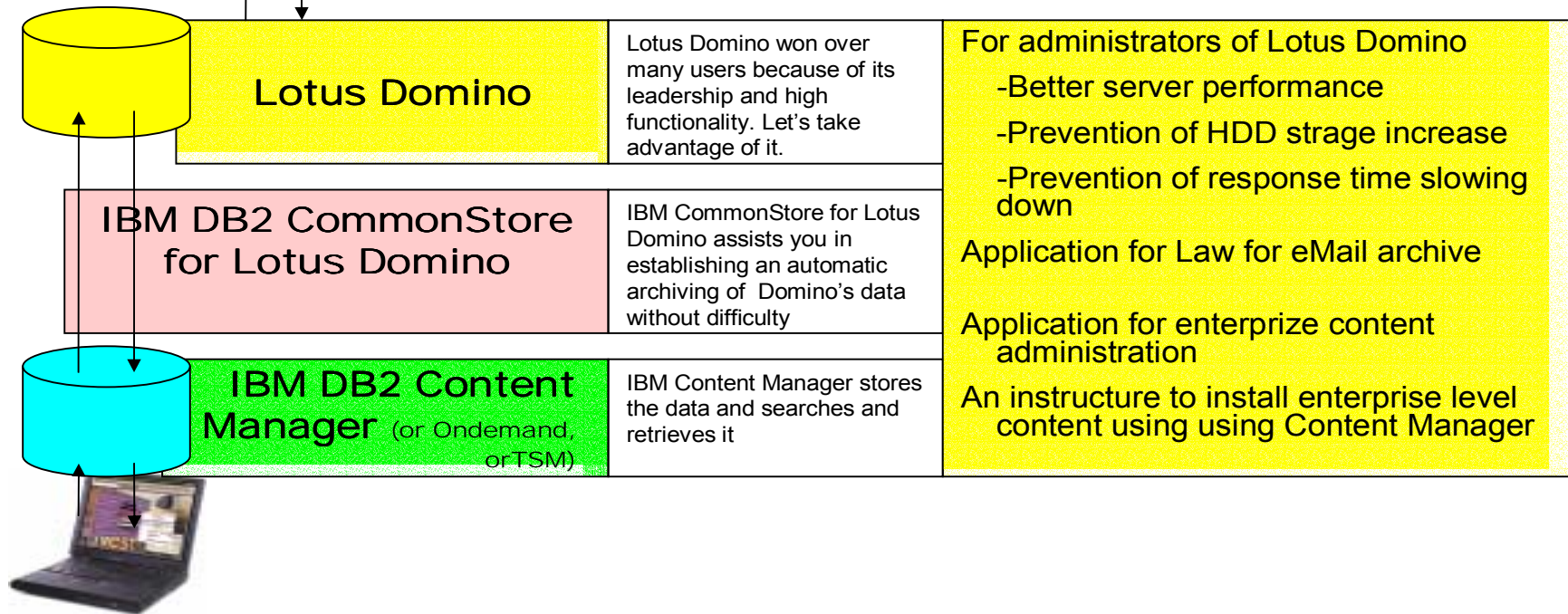IBM Content Manager OnDemand
Tivoli Storage Manager

To those who use Lotus Domino

We would like to propose how you can leverage your current investiment

• Easy to install mail archiving system： mail and attachments are getting bigger every year

• Reduce servers workload/ system cost/ managing cost

• Utilize strage efficiently

• Maintain Lotus Domino high performance
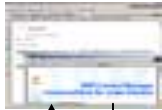
Why don't you use CommonStore for Lotus Domino to make Lotus Domino's functions more effective and simple?

Lotus Domino	Lotus Domino won over many users because of its leadership and high functionality. Let's take advantage of it.	For administrators of Lotus Domino
		    -Better server performance
		    -Prevention of HDD strage increase
		    -Prevention of response time slowing down
		Application for Law for eMail archive
		
		Application for enterprize content administration
		An instructure to install enterprise level content using using Content Manager

IBM DB2 CommonStore for Lotus Domino	IBM CommonStore for Lotus Domino assists you in establishing an automatic archiving of Domino's data without difficulty	
IBM DB2 Content Manager (or Ondemand, orTSM)	IBM Content Manager stores the data and searches and retrieves it	

Easy retrieval with Lotus Notes

E-mail archiving today

- It's relatively new (about 2-3 years).

- More and more companies do it.

- Analysts start writing about it.

- Many different forms and interpretations of one common base.

- It moves from a "point" solution to become an integral piece of enterprise content management (ECM)

What drives e-mail archiving today?

1

- Growth of the messaging system
  - ▸ More users
  - ▸ Larger mail boxes
  - ▸ More expensive operation
- Requirement
  - ▸ Reduce the growth of the messaging system
  - ▸ Offload old e-mails from production messaging system
  - ▸ Keep old e-mails in near on-line access

2

- Legal requirements or industry regulations
  - ▸ All e-mails of a certain user group have to be captured and retained for a certain number of years
  - ▸ Example: Securities Exchange Commission (SEC), regulations for broker and dealers
- Requirement
  - ▸ E-mails treated as business records
  - ▸ Provide e-mails on demand during audit or investigation

Rule-based, automatic offload with CommonStore

- Step 1
  - ▶ Finding the mails to offload
  - ▶ Going through thousands of mails
  - ▶ Typical criteria for rules
  - ▶ Document age (modification date, access date)
  - ▶ Document size
  - ▶ Mail box size
  - ▶ Can be also customer specific

- Very powerful and fast policy engine

- Step 2
  - ▶ Offloading through CommonStore for Lotus Domino
  - ▶ Usually timeslot after business hours
  - ▶ Example: 7 PM - 11 PM

- Very high archiving throughput
  - ▶ Largest installation with 200.000+ mails per day!

Archiving options

- **Attachment archiving**
  - ▶ Mail body remains within Domino
  - ▶ Significant offload

- **Stub archiving**
  - ▶ Entire document
  - ▶ Leaves the mail header ("stub") in Domino as a placeholder

- **Removing the entire document**
  - ▶ Requires entering a search later

- **Archiving by user**
  - ▶ User selects one ore more documents
  - ▶ User interaction

- **Archive repository**
  - ▶ Choice of server platform
  - ▶ Windows, AIX, Sun, HP-UX, iSeries, zOS (/390)

Small mail box for operation, large for user!

Number of kept e-mails

80
70
60
50
40
30
20
10
0

Multiple access, active processing (reply, delete, ...)

Archive

Infrequent access, retrieval from archive

Age in months
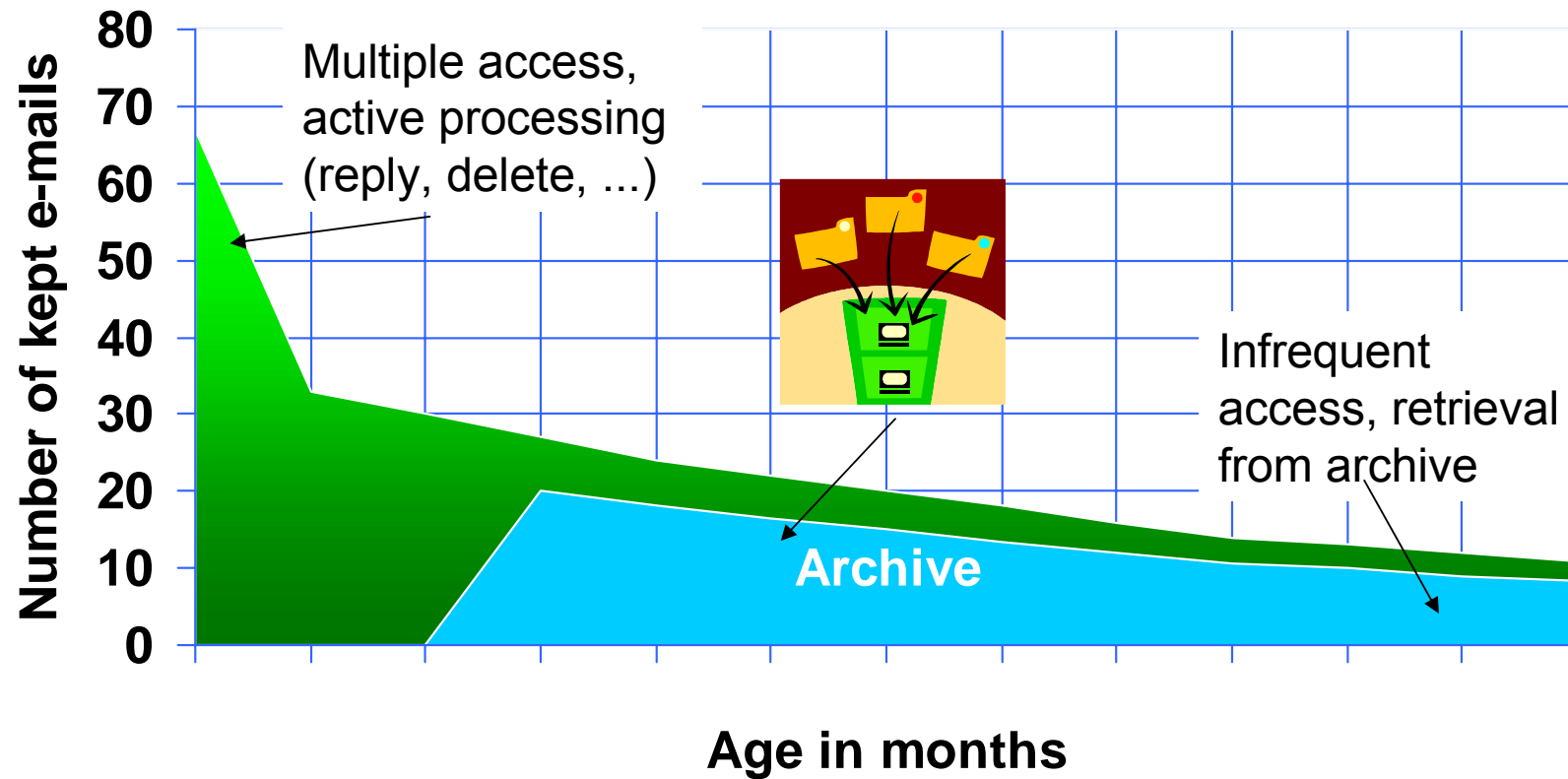
Archiving policy (rule): all attachments older than 90 days

Benefits

- Server backup
  - ▶ Less time needed
  - ▶ Enough time for other maintenance task
- Network
  - ▶ Less load due to data reduction
  - ▶ Avoids investing in additional bandwidth
- Workstations
  - ▶ No local archives
  - ▶ Data security and maintenance
- Operational costs
  - ▶ Better manageable

- High availability and disaster recovery
  - ▶ Becomes simpler and less expensive
- Performance
  - ▶ System remains performant without additional investment
- Server environment
  - ▶ Less new disks
  - ▶ Less new CPUs
- User satisfaction
  - ▶ Easy access, good performance
  - ▶ Less worries about mail box size/quota

E-mail archiving to meet legal/regulatory requirements (journal mail archiving)

DB2 Information Management Software
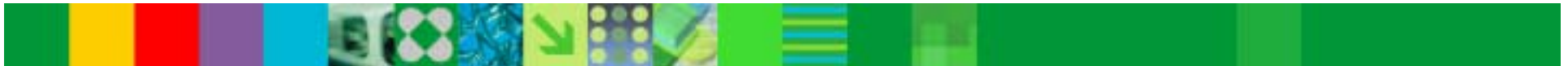
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Recent news

REUTERS — NEWS AND FINANCIAL INTELLIGENCE FROM THE WORLD LEADER

"Wall Street Firms Fined for not preserving e-mail"

BusinessWeek online

"Wall Street Firms Said to Break Email Rule"

FORTUNE

THE WALL STREET JOURNAL.

"States Prepare Investigation of …"

The New York Times ON THE WEB

"… Cooked Books Back in 2000…"

"Energy Trader Admits Faking Transactions"

Wall Street & Technology online

FT FINANCIAL TIMES World business newspaper

"Seeking…Technology to Archive Emails and IMs."

Regulatory compliance in the financial industry

Regulatory organizations have imposed stringent records retention requirements involving the secure, long-term archival and retrieval of information, including audit trails for retrieval and disposition.

SEC Rule 17a-4
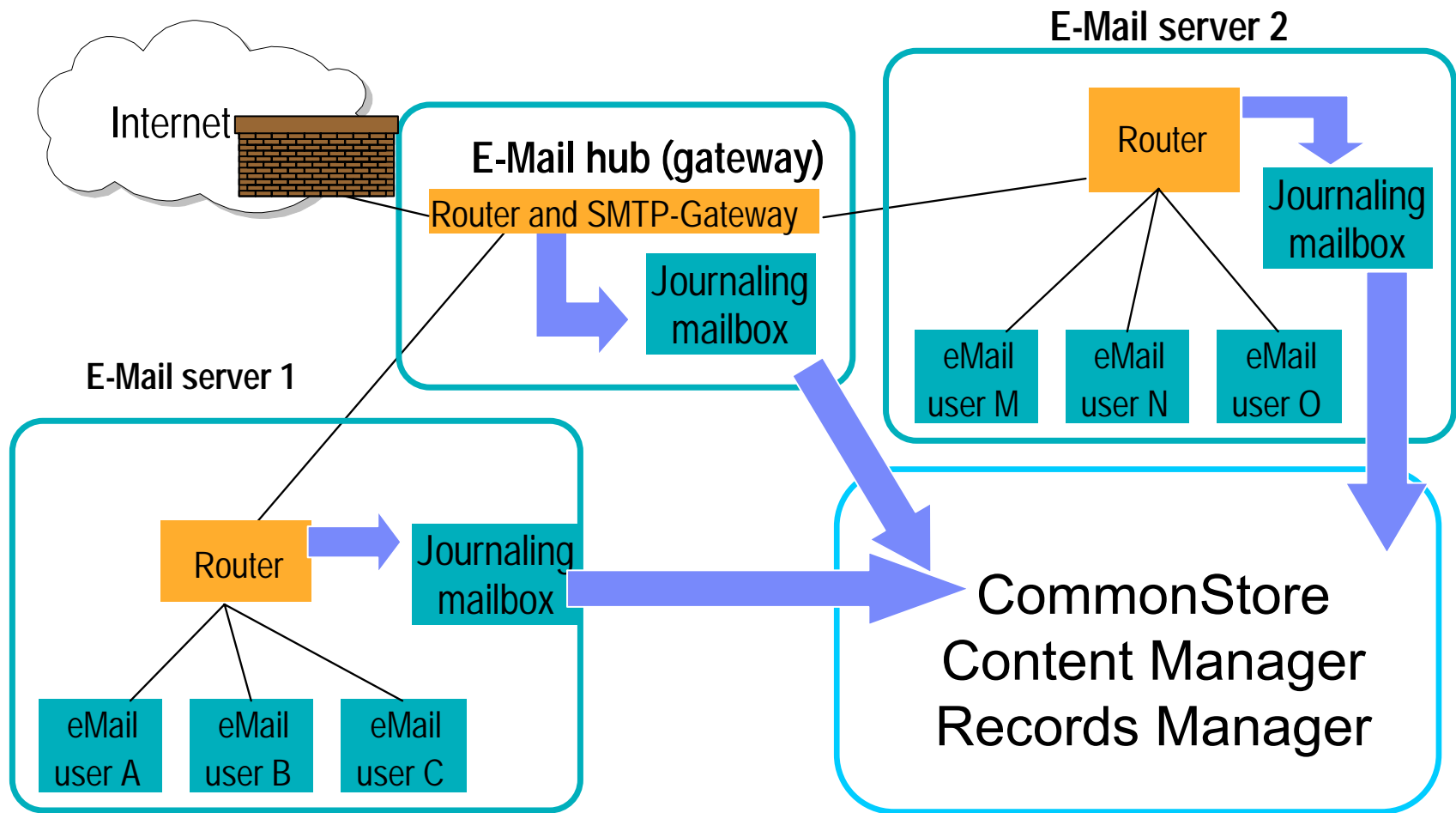
Digital Archiving Requirements

Updated 1997

NASD Rule 3010 & 3110

Supervisory Requirements

Effective 1999

Journal e-mail archiving

How are SEC / NASD requirements met?

Requirement	Met By
Capture correspondence unmodified [17a-4(f)(3)(v)]	**Message journaling for e-mail, transfer of e-mails with CommonStore into IBM Content Manager as archive for e-mail and all other enterprise content**
Non-rewritable, non-erasable format [17a-4(f)(2)(ii)(A)]	**WORM Optical jukebox or tape (IBM Tivoli Storage Manager on Windows and UNIX, OAM on zOS)**
Verify automatically the quality and accuracy of the storage media process [17a-4(f)(2)(ii)(B)]	**Logging in CommonStore, Content Manager, IBM Records Manager and Tivoli Storage Manager**
Duplicate storage [17a-4(f)(3)(iii)]	**Duplicate storage copy pool or two archive servers**
Duplicate index [17a-4(f)(3)(iv)(B)]	**Mirrored database or two archive servers**
Capacity to download indexes and records [17a-4(f)(2)(ii)(D)]	**CM Client, e-Client, or Notes DB with Common store for Domino**
For ALL internal & external correspondence [17a-4(b)(4)]	**Journaling on each router, not just SMTP inbound/outbound router**

Case study

- **Insurance company (US)**
    - ▶ 50.000 Notes users
    - ▶ Uses CommonStore for SEC compliance since 2000
    - ▶ Reference video on Internet
- **Archival**
    - ▶ Automatic preprocessing and archival with Notes agent
    - ▶ Index fields: recipient, sender, date, subject
    - ▶ 150.000+ e-mails per day
    - ▶ Currently 150 million mails in archive (approx. 7 TB)
    - ▶ Storage on WORM tape

- **Retrieval**
    - ▶ Restricted
    - ▶ Authorization process through Domino workflow
    - ▶ Search in archive
    - ▶ All matching documents retrieved to one (separate) Domino database
- **Old backup tapes**
    - ▶ Back to 1998
    - ▶ Restored them and archived mails with a 2nd CSLD server
- **Instant messaging**
    - ▶ Have started archiving Sametime chat logs

E-mails as business records

- Examples of Securities and Exchange Commission and National Association of Securities Dealers mandates
  - Certain records must be kept for 6 or 3 years respectively
    - Retention of communications
      - Paper documents / hardcopy
      - E- mails
      - Instant messages
      - …
    - Organizational documents
    - Account record information
    - Special reports
    - Compliance, supervisory and procedure manuals
    - Exception report

Enterprise content management (ECM)

Invoices, statements, reports

Scanned Paper and fax

ERP, SCM, CRM data

E-mail

Office documents & correspondence

Audio, Video, Photo

Web Content

Business Content in a Central Repository

Wireless & PDA

Kiosk

Portal / Browser

Call Center

Thanks for your attention

- Further information at
  - http://www.ibm.com/software/data/commonstore
  - **CommonStore for e-mail Archiving (41 minutes)**
    - http://lt.be.ibm.com/servlet/Gate/Component?action=load&customer=ibmintra&offering=ebu&itemCode=ltu2488f&xpos=0&ypos=156&ns=10010000000000000000000000000000000000000000